2.0 Mb DTI Implementation

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Overview

This chapter provides the information required to install 2.0 Mb DTI on Meridian 1 Option 11C systems, including:

- hardware installation
- software programming

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Hardware Requirements

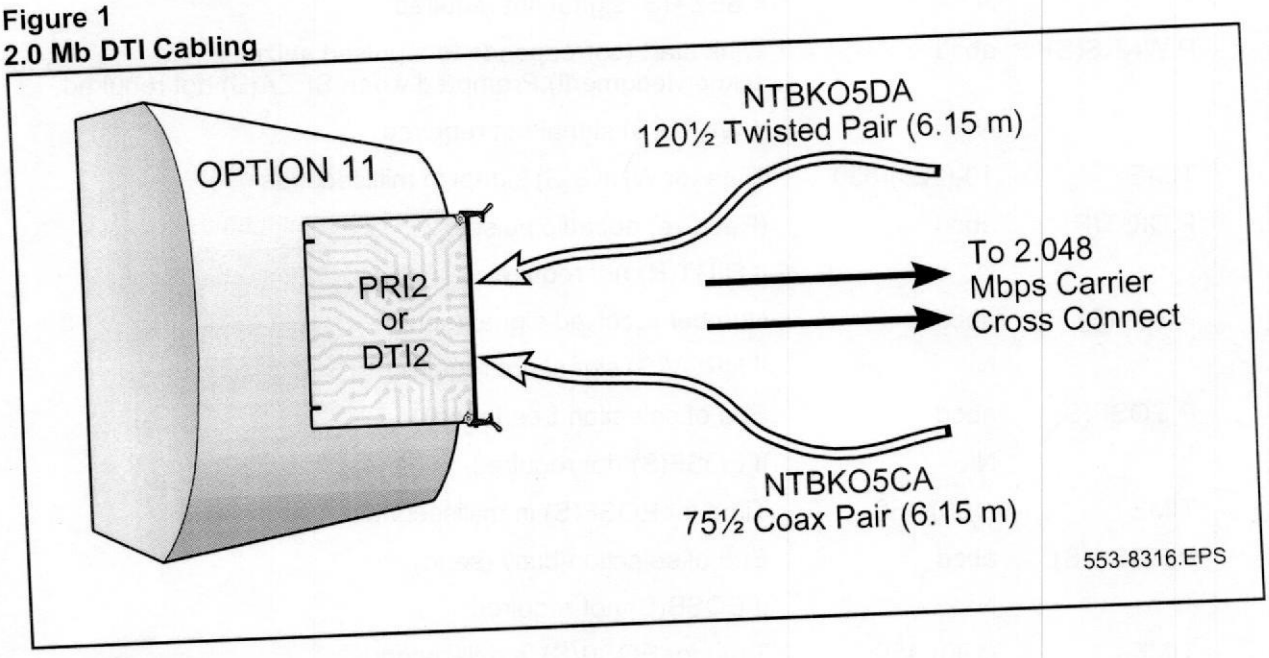
Hardware requirements for 2.0 Mb DTI are as follows:

- 2.0 Mb DTI Circuit card - NTAK10
  (a Clock Controller is incorporated into the circuit card)
- CEPT Cable - NTBK05DA (120 ¾ twisted pair—6.15 m length)

  or

  CEPT Cable - NTBK05CA (75 ¾ coaxial—6.15 m length)

Figure 1
2.0 Mb DTI Cabling



Prompt	Response	Description
	N	If SEZD(R) signal not required
SEZV(R)	abcd	Seize signal (send or receive) for voice calls.
	N	If SEZV(R) signals not required
P CALL(R)	abcd	(Receive) signal sent during seize by an incoming CO trunk.
TIME	ON OFF	Length of pulse time on, and time off. (default 2 seconds on, 8 seconds off)
SEZA(S)	abcd	Seize signal acknowledgment (send).
	N	If SEZA(S) signal not required
P WNKS(S)	abcd	Wink start (corresponds to a pulsed seize acknowledgment).Prompted when SEZA(S) not required.
	N	If WNKS(S) signal not required
TIME	10-(220)-630	Time for WNKS(S) signal in milliseconds
P DIGT(R)	abcd	(Receive) decadic pulses
	N	If DIGT(R) not required
NRCV(S)	abcd	Number received signal (send).
	N	If NRCV(S) signal not required
P EOSF(S)	abcd	End of selection free (send)
	N	If EOSF(S) not required
TIME	(100)-150	Time for EOSF(S) in milliseconds
P EOSB(S)	abcd	End of selection busy (send)
	N	If EOSB(S) not required
TIME	(100)-150	Time for EOSB(S) in milliseconds
P OPCA(R)	abcd	Operator calling time (receive) signal
	N	If OPCA(R) not required
TIME	64-(128)-192	Time of OPCA(R) pulse in milliseconds
REPT	(1)-5	Number of OPCA(R) pulses.
CONN(S)	abcd	Connect send
CONN(R)	abcd	Connect receive
P RRC(S)	abcd	Register recall (send) signal. Activated by Malicious Call Trace.
	N	If RRC(S) not required

NTAK10 2.0 Mb DTI card

The 2.0 Mb Digital Trunk Interface card provides the physical interface for the digital E-1 carrier on the Option 11C system. The card includes an on-board clock controller and is installed in slots 1 through 9 in the main cabinet. The NTAK10 2.0 Mb DTI card is also used for ISL shared mode applications.

For information on the NTAK10 faceplate LEDs, refer to DTI Maintenance in this guide. For more information on the operation of the on-board clock controller, refer to Network Clocking in this guide.

Install DTI hardware

The NTAK10 circuit card can be installed in any available card slot 1-9 in the main cabinet.

Inspect the NTAK10 circuit card

Inspect the circuit card before installing it in the main cabinet:

- Locate the NTAK10 2.0 Mb circuit card and carefully remove it from its packaging.
- Inspect the circuit card for any visible damage which may have occurred during shipping.

Set the switches

The NTAK10 incorporates four surface mounted dip switches. The following tables provided information on the various settings and related functions of these switches.

> ***Note:*** The ON position for all the switches is towards the bottom of the card. This is indicated by a white dot printed on the board adjacent to the bottom left corner of each individual switch.

Set the switches found on the circuit card as per the requirements of your specific installation.

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Switch S1—Clock Controller Configuration

This switch enables/disables the on-board Clock Controller.

Table 1
Switch S1

Switch	Off (Up)	On (Down)
S1-1	Spare	Spare
S1-2	Clock Controller Enabled	Clock Controller Disabled

Switch S2—Carrier Impedance Configuration

This switch sets the carrier impedance to either 120¾ or 75¾. Twisted pair cable is usually associated with 120¾. Coaxial cable is usually associated with the 75¾ setting.

Table 2
Switch S2

Switch	Off (Up)	On (Down)
S2-1	120¾	75¾
S2-2	75¾	120¾

Switch S3—Mode of Operation

This switch selects the mode in which the NTAK10 operates. The NTAK10 supports firmware that allows it to operate in the standard CEPT format mode, or the modified CEPT format used in France.

Table 3
Switch S3

Switch	Off (Up)	On (Down)
S3-1	Non-French Firmware	French Firmware
S3-2	Spare	Spare

Prompt	Response	Description
	N	If ESNW(S) not required
P CAS(S)	abcd	Centralized Attendant signal (send) pulse. Pulse time not variable.
		Note: Prompted for 2.0 Mb DTI only.
	N	If CAS(S) not required
CLRF(R)	abcd	Clear forward (receive)
	N	If CLRF(R) not required
SOSI	abcd	Special operator signal defined
	(N)	Undefined. Prompted when OPRC = N
Outgoing Calls:		
SEZ(S)	abcd	Seize voice or data from or to a non SL-1 switch
SEZD(S)	abcd	seize data (send) signal. Only for SL-1 to SL-1 applications
	N	If SEZD(S) not required
SEZV(S)	abcd	Seize voice (send) signal. Only recommended for SL-1 to SL-1 applications
TIME	xxx yyy	Minimum and maximum time range for OPRS(R) in milliseconds. xxx = 8-(48)-2040 yyy = xxx-(128)-2040
	N	If SEZV(S) not required
SEZA(R)	abcd	Seize acknowledgment (receive) signal
	N	If SEZA(R) not required
P WNKS(R)	abcd	Wink start pulsed seize acknowledgment (receive) signal
	N	If P WNKS(R) not required
TIME	20-(140)-500, 20-(290)-500	Minimum and maximum length of WNKS(R) pulse in milliseconds
P EOS(R)	abcd	End of selection (receive) signal
	N	If EOS(R) not required
TIME	(64)-320 64-(256)-320	Length of EOS(R) pulse stored in multiples of 8 milliseconds.
CONN(S)	abcd	Connect send
CONN(R)	abcd	Connect receive

Switch S4—Carrier Shield Grounding

This switch allows for the selective shield grounding of the Tx and/or Rx pairs of the carrier cable. Closing the switch (down position) applies Frame Ground (FGND) to the coaxial carrier cable shield, creating a 75¾ unbalanced configuration. The Tx and Rx pairs are referenced with respect to the 2.0 Mb DTI card (i.e. Rx is carrier received from the far end device).

Table 4
Switch S4

Switch	Off (Up)	On (Down)
S4-1	Receive Shield Unconnected	Frame Ground on Receive Shield
S4-2	Transmit Shield Unconnected	Frame Ground on Transmit Shield

Note: The usual method is to ground the outer conductor of the receive coax signal.

Insert the NTAK10 into the main cabinet

Slide the circuit card into any unused slot (1 - 9) in the main cabinet. Secure the circuit card in the cabinet by locking the lock latch assemblies.

Connect the cables

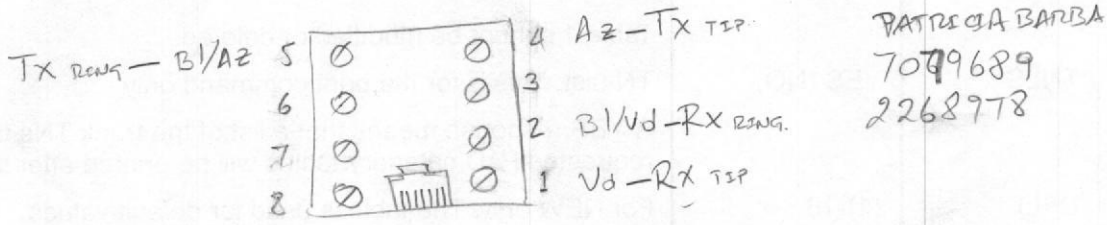
- In the cabling area, located directly below the card cage, remove the retaining bar used to secure the MDF cables. Connect the NTBK05DA/CA interface cable to the 50-pin Amphenol connector below the card slot holding the NTAK10 2.0 Mb DTI circuit card. Re-install the retaining bar to secure the cable(s) in place.
- Terminate the NTBK05DA/CA carrier cable as required.

NTBK05DA pinouts

The pinouts for the NTBK05DA cable are as follows:

Table 5
NTBK05DA pinouts

From: 50 pin MDF connector	To: 9 pin connector	Colour	Signal
pin 23	pin 6 Bl/Vd	Black	R0 } RX
pin 48	pin 7 Vd	White	T0 }
pin 50	pin 9 Cf	Bare	R0/T0 FGND
pin 24	pin 2 Bl/Az	Black	R1 } TX
pin 49	pin 3 Az	Red	T1 }
pin 25	pin 5 Nj	Bare	R1/T1 FGND



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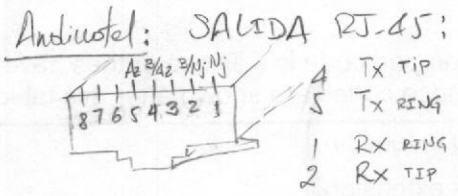

ENL CC Ø
LCNT loop
RCNT loop

ENTRADA RJ-45:

Modum { 1 2 TX
Paradotel { 4 5 RX

MERIDIAN 1 RJ-45

Tip 1 } RX
Ring 2 }

Tip 4 } TX
Ring 5 }

Prompt	Response	Description
SOSO	abcd,(N)	special operator signal defined (undefined). ***Note:*** Prompted when OPRC = N

Step 4: Define the 2.0 Mb DTI pad tables, using LD 73. The following prompts in LD 73 require a response.

LD 73 – Define the 2.0 Mb DTI pad tables.

Prompt	Response	Description
REQ	NEW CHG	Add or change Digital Trunk Interface data block
TYPE	DTI2	2.0 Mb DTI
FEAT	PAD	Request the digital pad feature.
PDCA	1-16	PAD Category table. If one channel is using the specified table, then the command is aborted. Table 1 cannot be modified or deleted.
TNLS	YES (NO)	TN List. This is for the print command only. A YES response means that a list of the trunk TNs using the requested PAD category tables will be printed after the table.
DFLT	(1)-16	For NEW only. The table is used for default values.
The following prompts define the pad levels. The receiving pad code is *r* and the transmission pad code is *t*. These entries have the range 0-15. The pad values (in decibels) relating to these codes are shown after this table.		
ONP	r t	On-premises extension
OPX	r t	Off-premises extension
DTT	r t	Digital TIE trunks
SDTT	r t	digital Satellite TIE trunks
NTC	r t	Nontransmission compensated
TRC	r t	Transmission compensated
DCO	r t	digital COT, FEX, WAT, and DID trunks
VNL	r t	VIA NET LOSS
DTO	r t	2.0 Mb DTI digital TOLL office trunks

NTBK05CA pinouts

The pinouts for the NTBK05CA cable are as follows:

Table 6
NTBK05CA pinouts

From: 50 pin MDF connector	To: Transmit coax connector	To: Receive coax connector	To: 50 pin MDF connector
pin 23	Inner conductor	—	—
pin 48	outer conductor	—	—
pin 24	—	Inner conductor	—
pin 49	—	outer conductor	—
pin 21	—	—	pin 49
pin 46	—	—	pin 48

DTI software programming

The following information describes the process required to program the 2.0 Mb DTI feature in the Meridian 1 Option 11C software.

The information is presented in the sequence in which it must be programmed. As an example, 2.0 Mb DTI loops must be configured before defining any error detection thresholds, loop timers, pad information or ABCD signaling bit information. Table 7 summarizes the procedures required to configure 2.0 Mb DTI on Option 11C.

Table 7
Procedure summary, configure 2.0 Mb DTI on Option 11C

Step	Overlay	Action
1	LD 17 Configuration Record	Select Pulse Code Modulation companding Law
2	LD 17 Configuration Record	Add a 2.0 Mb DTI loop.
3	LD 73 Digital Data Block	Define the 2.0 Mb DTI ABCD signaling bit tables
4	LD 73 Digital Data Block	Define the 2.0 Mb DTI pad tables
5	LD 73 Digital Data Block	Define the 2.0 Mb DTI loop timers
6	LD 73 Digital Data Block	Define the 2.0 Mb DTI system timers
7	LD 16 Route Data Block	Define service routes.
8	LD 14 Trunk Data Block	Define the associated list of service trunks.

The prompts and responses are explained in the text that follows. Responses in parentheses are default values throughout the procedure.

ATO	r t	analogue TOLL office trunks
DTI2	r t	2.0 Mb DTI trunk (prompted only if the 1.5/2.0 Mb Gateway feature is equipped and TYPE=DTI2)
XUT	r t	analogue CO trunk (prompted only if the 1.5/2.0 Mb Gateway feature is equipped and TYPE=DTI2)
XEM	r t	analogue TIE trunk (prompted only if the 1.5/2.0 Mb Gateway feature is equipped and TYPE=DTI2)

The following pads are available for the 2.0 Mb DTI card. Their respective codes are also given. Positive dB represents loss and negative dB represents gain.

Table 8
Pad values

code	0	1	2	3	4	5	6	7
value (dB)	0.0	+1.0	+2.0	+3.0	+4.0	+5.0	+6.0	+7.0
code	8	9	10	11	12	13	14	15
value (dB)	+8.0	+9.0	+10.0	+11.0	+12.0	+13.0	+14.0	-1
code	16	17	18	19	20	21	22	23
value (dB)	-2	-3	-4	-5	-6	-7	-8	-9
code	24	25	26					
value (dB)	-10	idle	+0.6					

Step 1: Select the Pulse Code Modulation companding Law.

LD 17 – Select the Pulse Code Modulation companding Law.

Prompt	Response	Description
REQ:	CHG	
TYPE:	PARM	Change system parameters
...		
PCML		Pulse Code Modulation companding Law
	(MU)	μ-law (use μ-law for North America)
	A	A-Law

Step 2: Add a 2.0 Mb DTI loop.

The allowable range of base-cabinet slot numbers for the DTI circuit card is 1-9. The CPU/CONF circuit card is provisioned in slot 0, and the TDS card is provisioned in slot 1, effectively leaving slots 2-9 available to these interface card.

LD 17 – Add a 2.0 Mb DTI loop

Prompt	Response	Description
REQ:	CHG	
TYPE:	CEQU	Change common equipment
...		
DTI2	xxx	Enter a loop number for 2.0 Mb DTI.

Step 3: Define the 2.0 Mb DTI ABCD signaling bit tables. Use LD 73 to allow the implementation and administration of the 2.0 Mb DTI software and hardware.

The "abcd" response represents the following trunk supervisory signals:

- Steady signals: bits 0, 1 or U (do-not-care). If c or d are not input they default to 0 and 1 respectively.
- Pulsed signals: P (pulsing), X (not pulsed) or U[4] (do-not-care).

The following prompts are given when FEAT = ABCD:

LD 73 – Define the 2.0 Mb DTI ABCD signaling bit tables.

Prompt	Response	Description
REQ	NEW CHG	Add or change Digital Trunk Interface data block
TYPE	DTI2	2.0 Mb/s DTI data block
FEAT	ABCD	ABCD bit signaling category.
SICA	2-16	Signaling category
...		
DFLT	(1)-16	Default signaling category to be used for default values JDMI defaults to 16 with <CR>[3].
Incoming/Outgoing Calls:		
IDLE(S)	abcd	(Send) idle signal bits
IDLE(R)	abcd	(Receive) idle signal bits
FALT(S)	abcd	(Send) bits. 2.0 Mb DTI out-of-service
	N	If FALT (send) signal not required
FALT(R)	abcd	(Receive) bits. 2.0 Mb DTI out-of-service
	N	If FALT (receive) signal not required
Incoming Calls:		
SEZ(R)	abcd	Seize signal (send or receive) for voice or data calls from or to a non-SL-1.
SEZD(R)	abcd	Seize signal (send or receive) for data calls between SL-1s.

The following prompts and associated responses define the grade of service timers for the DTI card. Group I problems are treated individually. They are bipolar violations, bit error rate (frame alignment) slips and CRC-4 errors.

Group II problems are treated as a group. They are bit 3 of TS0 (far end out of service), bit 6 of TS16 (far end lost multiframe alignment), AIS (alarm indication signal), loss of frame alignment and loss of multiframe alignment.

Responses are interpreted as follows:

- mt = maintenance threshold time.
- ct = new call suppression (hardware service removal) threshold time.
- ot = out of service threshold time.
- dt = no new data calls suppression threshold time.

Each of the response times are expressed as follows:

- nnnY = time in milliseconds where nnnn = 20-5000 (input to nearest 20 milliseconds.)
- nnnS = time in seconds where nnn = 1-240
- nnnM = time in minutes where nnn = 1-240
- nnH = time in hours where nn = 1-24

Prompt	Response	Description
CRC	NC mt dt ct ot	Cyclic redundancy check error counts NC=Error count values are in the range 1-255 mt = Maintenance threshold time (MNT) dt = No new data calls threshold time (NNDC) ct = No new calls threshold time (NNC) ot = Out of service threshold time (OOS). ***Note:*** The following requirements must be met for input mt = Maintenance threshold must be equal to or greater than dt. dt = Data calls threshold must be equal to or greater than ct. ct = Calls threshold must be equal to or greater than ot.

Prompt	Response	Description
TIME	10-(100)-150	Time of RRC(S) signal in milliseconds
P BURS(S)	abcd	Bring up receiver (send). Uses switch-hook flash timer for timer.
	N	If BURS(S) not required
P BURS(R)	abcd	Bring up receiver (receive). Uses switch-hook flash timer for timer.
	N	If BURS(R) not required
TIME	64-(128)-192	Length of BURS(R) pulse in milliseconds
P CAS(S)	abcd	CAS Flash. Same timing as analogue trunks. ***Note:*** Prompted for JDMI only. Operational only if CASM package equipped.
	N	If CAS(S) not required
CLRB(S)	abcd	Clearback (send) signal.
	N	If CLRB(S) not required (IDLE signal is used).
P RCTL(S)	abcd	Release control (send) signal.
	N	If RCTL(S) not required ***Note:*** Prompted only when CLRB is unused or is defined the same as IDLE.
TIME	100-(150)-300	Time value is stored in multiples of 10 milliseconds.
R RCOD(S)	abcd	Release Control Originating party Disconnect. This signal is another pulsed SL-1 signal sent on incoming trunks when the originating party disconnects first.
	N	If RCOD(S) not required
TIME	150	Timer value in milliseconds is fixed
P OPRS(R)	abcd	operator (receive) manual recall signal
	N	If OPRS(R) not required
TIME	xxx yyy	Minimum and maximum time range for OPRS(R) in milliseconds. xxx = 8-(48)-2040 yyy = xxx-(128)-2040
P NXFR(S)	abcd	Network transfer signal (send) pulse. Pulse time not variable.
	N	If NXFR(S) not required
P ESNW(S)	abcd	ESN wink signal (send) pulse. Pulse time not variable.

Step 6: Define the 2.0 Mb DTI system timers, using LD 73. The following prompts in LD 73 require a response.

LD 73 – Define the 2.0 Mb DTI system timers.

Prompt	Response	Description
REQ	NEW CHG	Add or change Digital Trunk Interface data block
TYPE	DTI2	2.0 Mb DTI
FEAT	SYTI	Change the switch timers and counters for 2.0 Mb DTI. There is only one such block per switch.
MAND	0-(15)-1440	Maintenance guard time in minutes.
NCSD	0-(15)-1440 1S-59S	New call suppression guard time in minutes and seconds.
OSGD	0-(15)-1440	Out of service guard time in minutes.
OOSC	0-(5)-127	Out of service occurrences since midnight (DTI disabled).
PERS	0-(100)-254	Persistence timer in milliseconds for far end problems.
DBNC	(10)-32	Debounce timer in milliseconds
CLKN	1-9	Clock controller slot number
	<CR>	No change for defaults
	X	To remove clock controller data
PREF CK0	c	Primary reference for clock controller zero. The response is the loop from which the clock controller will be deriving its primary clock pulses. NOT PROMPTED FOR Option 11C
	<CR>	Primary reference remains at current setting.
	X	Primary reference reverts to the free-run mode.
SREF CK0	c	Secondary reference for clock controller zero. The response is the loop from which the clock controller will be deriving its secondary clock pulses.
	<CR>	Secondary reference remains at current setting.
	X	Secondary reference reverts to the free-run mode.
	C	Card number for the secondary reference clock for clock controller 0.
	<CR>	Primary reference remains at current setting.
	X	Primary reference reverts to the free-run mode.

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Prompt	Response	Description
P OPRC(R)	abcd	Operator recall signal for special services. minimum three pulses of 160 milliseconds each.
	N	If OPRC(R) not required
P BURS(S)	abcd	bring up receiver (send) for L1 networking
	N	If BURS(S) not required
P BURS(R)	abcd	bring up receiver (receive) for L1 networking
	N	If BURS(R) not required
TIME	64-(128)-192	length of BURS(R) pulse in milliseconds.
	N	If SEZV(S) not required
P CAS(R)	abcd	CAS Flash. Same timing as analogue trunks. Prompted for JDMI only. Operational only if CASR package equipped.
	N	If CAS(R) not required
CLRB(R)	abcd	clear back
	N	If CLRB(R) not required, when IDLE would be used
P RCTL(R)	abcd	Release control. Prompted only when CLRB is unused or is defined the same as IDLE.
	N	If RCTL(R) not required
TIME	96-(128)-320 96-(256)-320	time value stored in multiples of 8 milliseconds
P NXFR(R)	abcd	network transfer
	N	If not required
P ESNW(R)	abcd	ESN wink signal
	N	If ESNW(R) not required
P CAS(R)	abcd	centralized attendant service signal. 2.0 Mb DTI only
	N	If CAS(R) not required
CLRF(S)	abcd	Clear forward (send)
	N	If CLRF(S) not required
TIME	(0)	800 milliseconds
		Note: Prompted when the abcd bits entered in response to the CLFR(S) prompt are different from the abcd bits of the IDLE signal

ACO	r t	Analogue CO or WATS trunks
AFX	r t	Analogue FEX trunks
ADD	r t	Analogue DID trunks
SATT	r t	analogue satellite TIE trunks
TNLS	YES (NO)	TN List. This is for the print command only. A YES response means that a list of the trunk TNs using the requested PAD category tables will be printed after the table.
DFLT	(1)-16	For NEW only. The table is used for default values.
The following prompts define the pad levels. The receiving pad code is *r* and the transmission pad code is *t*. These entries have the range 0-15. The pad values (in decibels) relating to these codes are shown after this table.		
ONP	r t	On-premises extension
OPX	r t	Off-premises extension
TNLS	YES (NO)	TN List. This is for the print command only. A YES response means that a list of the trunk TNs using the requested PAD category tables will be printed after the table.
DFLT	(1)-16	For NEW only. The table is used for default values.
The following prompts define the pad levels. The receiving pad code is *r* and the transmission pad code is *t*. These entries have the range 0-15. The pad values (in decibels) relating to these codes are shown after this table.		
ONP	r t	On-premises extension
OPX	r t	Off-premises extension
DTT	r t	Digital TIE trunks
SDTT	r t	digital Satellite TIE trunks
NTC	r t	Nontransmission compensated
TRC	r t	Transmission compensated
DCO	r t	digital COT, FEX, WAT, and DID trunks
VNL	r t	VIA NET LOSS
DTO	r t	2.0 Mb DTI digital TOLL office trunks
ACO	r t	Analogue CO or WATS trunks
AFX	r t	Analogue FEX trunks
ADD	r t	Analogue DID trunks
SATT	r t	analogue satellite TIE trunks

Step 5: Define the 2.0 Mb DTI loop timers, using LD 73. The following prompts in LD 73 require a response.

LD 73 – Define the 2.0 Mb DTI loop timers.

Prompt	Response	Description
REQ	NEW CHG	Add or change Digital Trunk Interface data block
TYPE	DTI2	2.0 Mb DTI
FEAT	LPTI	Set the timers used for a 2.0 Mb DTI
LOOP	l	2.0 Mb DTI loop number.
P DIGT(S)	abcd	(send) digit pulse timing from TDS. Bits P, X or U.
	N	If DIGT(S) signal not required
P METR(R)	abcd	metering (receive). Bits P, X or U. Only two P bits allowed. COT and DID trunks only. ***Note:*** PPM package must be enabled.
	N	If METR(R) signal not required
EDGE	0	PPM bit counted when changed from 1 to 0.
	1	PPM bit counted when changed from 0 to 1.
TIME	40-(240)-480	maximum time METR signal can be on in milliseconds.
SASU	0-(1920)-8064	seize acknowledge supervision period in milliseconds. 2.0 Mb DTI default = 1920
MFAO	YES (NO) <CR>	DTI card will or will not set bit 3 of timeslot 0 if loss of Multiframe Alignment Signal (MFAS) occurs. 2.0 Mb DTI default = NO <cr> = no change is required
SZNI	YES (NO)	PSTN incoming seizure during lockout of MFAS and far-end fault states allowed (denied)
MFF	CRC	Multiframe format - Cyclic Redundancy Check (CRC 4)
	(AFF)	Alternative Frame Format ***Note:*** Prompted for Option 11C only. For non Option 11C only AFF is supported.

Prompt	Response	Description
BPV	NB mt dt ct ot	Bipolar violation error counts NB = Error count values are in the range 1-255 mt = Maintenance threshold time (MNT) dt = No new data calls threshold time (NNDC) ct = No new calls threshold time (NNC) ot = Out of service threshold time (OOS). ***Note:*** The following requirements must be met for this input: mt = >dt = >ct = >ot.
FAP	NF mt dt ct ot	frame alignment problem thresholds NF = Error count values are in the range 1-255 mt = Maintenance threshold time (MNT) dt = No new data calls threshold time (NNDC) ct = No new calls threshold time (NNC) ot = Out of service threshold time ***Note:*** The following requirements must be met for this input: mt = >dt = >ct = >ot.
SLP	NS mt dt ct ot	Maintenance threshold slip count NS = Error count values are in the range 1-255 mt = Maintenance threshold time (MNT) dt = No new data calls threshold time (NNDC) ct = No new calls threshold time (NNC) ot = Out of service threshold time (OOS).
GP2	T2 mt dt ct ot	Group 2 error thresholds. This is the maximum amount of time that can occur before software checks the associated thresholds of 120 to 32,640 msec and rounds it to the closest multiple of 128 msec. T2 error count values are in the range 1-(20)-255. NC = Error count values are in the range 1-255 mt = Maintenance threshold time (MNT) dt = No new data calls threshold time (NNDC) ct = No new calls threshold time (NNC) ot = Out of service threshold time (OOS). ***Note:*** The following requirements must be met for this input: mt = >dt = >ct = >ot.
FRFW	YES (NO)	This 2.0 Mb DTI loop is (is not) equipped with special Firmware for France.

Prompt	Response	Description
CCGD	0-(15)-1440	Clock controller free run guard time in minutes.
CCAR	0-(15)	Clock controller audit rate. The time, in minutes, between normal CC audits. Only programmable on units equipped with 2-Mb DTI. ***Note 1:*** The clock controller prompts will only appear for clocks which are valid for the machine type being configured. The prompts will only appear if the system is in a valid state for the definition of the 2.0 Mb DTI clock controller data (i.e., the DTI clock references must be unused or in a free-run mode). ***Note 2:*** Before programming clock controller references, the QPC775 clock controller card(s) must be plugged in, and the switches on the system's QPC441 3 Port Extender appropriately set. Unless this is done, the PREF and SREF prompts are not given.

Step 7: Define service routes. Use LD 16 to configure service routes and set the NRAG duration timer.

LD 16 – Configure the service routes.

Prompt	Response	Description
REQ	NEW CHG	Add or change Route data block
TYPE	RDB	Route data block
CUST	0-31	Customer number
ROUT	0-30	Route number
TKTP		Service routes allowed with ISDN
	TIE	Tie trunk route (the only service trunk type permitted for Meridian 1 to Meridian 1 connections)
	COT	Central office trunk
	DID	Direct Inward Dial trunk
RCLS	(EXT) INT	Class marked route as Internal or External
DTRK		Digital trunk route
	(NO) YES	Analog Digital
DGTP	DTI2	Select a digital trunk type of 2.0 Mb DTI
...		

Prompt	Response	Description
NCNA	YES (NO)	Network Call Name is (is not) allowed
NCRD	YES (NO)	Network Call Redirection. Allows network call redirection messages to be sent (or blocks messages if NCRD=no).
PTYP		Port type at far end:
		Analogue tie trunk routes:
	(ATT)	Aanalogue Tie trunk
	AST	Analogue satellite Meridian 1 Tie trunk or ESN satellite Meridian SL-1 Tie trunk
	AOT	Analogue Tie trunk, used instead of ATT whenever the Meridian 1 has one or more digital satellite trunk routes (DST) to any digital satellite Meridian 1which includes OPX sets
		Digital tie trunk routes:
	(DTT)	Digital Tie trunk
	DCT	Combination digital Tie trunk
	DST	Digital satellite Meridian 1 Tie trunk
AUTO	YES (NO)	Auto-terminate must be NO if response to DSEL is VOD
ICOG	IAO	Incoming and outgoing trunk
	ICT	Incoming trunk
	OGT	Outgoing trunk
SRCH	(LIN)	Linear search, or round-robin search used for outgoing trunks
	RRB	
ACOD	xxxx	Trunk route access code
TARG	1-15	Trunk access restriction group for routes
OABS	0-9	Outgoing digit(s) to be absorbed
INST	(0)-999	Digits to be inserted
CNTL	(NO) YES	Changes to controls or timers
NEDC		Near end disconnect control
	ETH	Either end control
	ORG	Originating end control. Default for TIE, ATVN, DID, and CCSA trunk types
FEDC		Far end disconnect control
		Note: Loop start trunks may be assigned either ETH or ORG.
	ETH	Either end
	FEC	Far end
	JNT	Joint

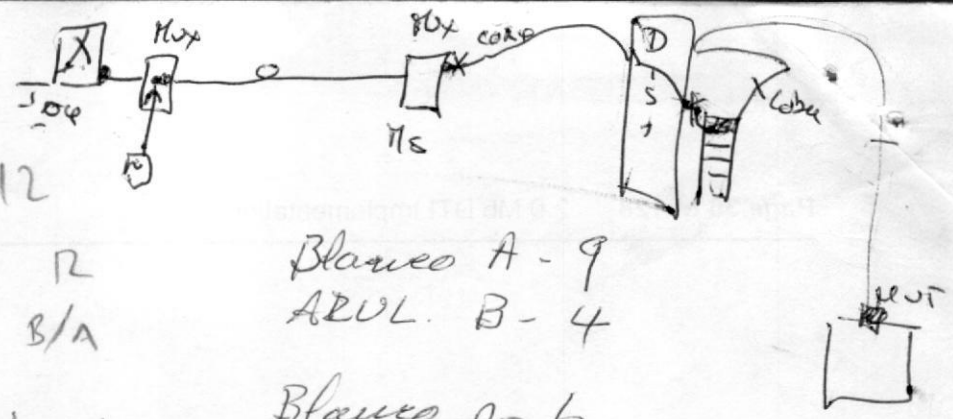
Prompt	Response	Description
	(ORG)	Originating end
DLTN	YES (NO)	Dial tone on originating calls
TIMER	(30)-240	Network Ring Again duration timer—time is in minutes ***Note:*** Package 148, Advanced ISDN Features, is required.

Step 8: Define the associated list of service trunks. Use LD 14.

LD 14 – Define the associated list of service trunks

Prompt	Response	Description
REQ	NEW CHG	Add or change Trunk data block
TYPE	TIE	Tie trunk route (only type allowed with SL-1 to SL-1 ISDN ISL or 2.0 Mb DTI)
	COT	Central Office trunk data block
	DID	Direct Inward Dial trunk data block
CHID	1-382	Channel ID for this trunk
TN	l c	Terminal Number Use loop number created in LD 17, where: • l = 0-9, 2.0 Mb DTI loop number • c = 1-30, 2.0 Mb DTI channel
TOTN	l c	New loop and channel. Loop must be a 2.0 Mb DTI loop, where: • l = 0-9, 2.0 Mb DTI loop number • c = 1-30, 2.0 Mb DTI channel
PDCA	(1) - 16	Pad Category Number. This prompt is given if the loop is a 2.0 Mb DTI loop, or if the loop is a 2.0 Mb DTI loop and the 1.5/2.0 Mb Gateway feature is equipped. For 2 to 16, the pad category used must already be defined in LD 73.
PCML	(MU) A	System PCM law. Prompted if the loop is 2.0 Mb DTI, or if the loop is a 2.0 Mb DTI loop and the 2.0 Mb Gateway feature is equipped. MU, the default, was entered in the PCML prompt in LD 17.
CUST	0-31	Customer number

NCOS	0-3 0-7 0-15	Network class-of-service group number: CDP BARS/NFCR NARS
RTMB	0-127 1-510	Route number and member number
NITE	xxxx	Night-service directory number
TGAR	(0)-15	Trunk group access restriction
CLS		Class-of-service restrictions Note: If DIP option is selected, a new SLCA table must be defined in LD 73.



RJ.

P11 P12

T R T R

N B/N A B/A

Blanco A - 9
AZUL B - 4

Blanco A - 6
Tomate B - 1

Wilson Angel
097330458

~~1 y 6 (Tx)~~

~~3 y 5 (Rx)~~ DB-9

6 (T)
1 (Ring)
Rx

8 (T)
5 (Ring)
Tx

Q421

Libre
Datos 10 → IDLE
Atos 10

Tono
Atn 10 → SEIZURE
00

Acuse de recibo 00 → SEZA
11

Respuesta 00 → CONNECT
01

Sin enlace
00 01

Fin
00 01

Bloqueo
00 11